### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau



# 

### (43) International Publication Date 13 May 2004 (13.05.2004)

PCT

## (10) International Publication Number WO 2004/039426 A3

(51) International Patent Classification7:

A61N 1/30

(21) International Application Number:

PCT/IL2003/000901

(22) International Filing Date: 30 October 2003 (30.10.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 152575

31 October 2002 (31.10.2002)

(71) Applicant (for all designated States except US): TRANSPHARMA MEDICAL LTD. [IL/IL]; P.O. Box 222, 56000 Yehud (IL).

(72) Inventors: and

(75) Inventors/Applicants (for US only): LEVIN. Galit [IL/IL]; 15 Haegoz Street, 42954 Nordiya (IL). STERN, Meir [IL/IL]; 3 Hafetz Haim Street, 76217 Rehovot (IL). DANIEL, Dorit [IL/IL]; 16/6 Hasharon Street, 43351 Ra'anana (IL).

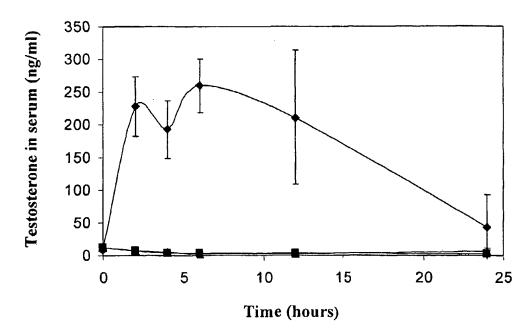
- (74) Agent: WEBB, Cynthia; Webb & Associates, P.O. Box 2189, 76121 Rehovot (IL).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: TRANSDERMAL DELIVERY SYSTEM FOR WATER INSOLUBLE DRUGS



(57) Abstract: The present invention provides a system for transdermal delivery of water insoluble drugs and methods using thereof. The system comprises an apparatus that generates hydrophilic micro-channels in an area of skin of a subject and a medical patch comprising a water insoluble drug and a carrier molecule that enhances the solubility of the drug in aqueous solution. The system is particularly useful for transdermal delivery of steroids.



# WO 2004/039426 A3



(88) Date of publication of the International search report: 10 September 2004

(15) Information about Correction:
Previous Correction:
see PCT Gazette No. 29/2004 of 15 July 2004, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

# BEST AVAILABLE COP'

# INTERNATIONAL SEARCH REPORT

International application No.

|  | PCT/IL03/00901  |  |  |   |  |
|--|---|--|--|---|--|
| A. CLASSIFICATION OF SUBJECT MATTER  |   |  |  |   |  |
| IPC(7) : A61N 1/30<br>US CL : 604/501  |   |  |  |   |  |
| According to International Patent Classification (IPC) or to both national classification and IPC  |   |  |  |   |  |
| B. FIELDS SEARCHED   |   |  |  |   |  |
| Minimum documentation searched (classification system followed by classification symbols)  |   |  |  |   |  |
| U.S.: 604/19-21, 501   |   |  |  |   |  |
|  |   |  |  |   |  |
| Documentation searched other than minimum documentation and the search of the search o |   |  |  |   |  |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  |   |  |  |   |  |
| ·  |   |  |  |   |  |
|  |   |  |  |   |  |
| Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)   |   |  |  |   |  |
|  |   |  |  |   |  |
|  |   |  |  |   |  |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT   |   |  |  |   |  |
| Category *   | Citation of document, with indication, where ap   | ppropriate, of the releva  | ant passages   | Relevant to claim No.                     |  |
| X  | US 5,320,597 A (SAGE, JR. et al) 14 June 1994 (14.06.1994), See column 3, lines 42-68, column 9, lines 49-55, column 10, line 12 to column 11, line 5.                  |  |  | 1-4,9-12,17-20,24-                        |  |
| Y  | 29,33-35  |  |  |   |  |
|  |   |  | `  | 36-40                                     |  |
| X  |   |  |  | 1,2,9-12,17,18,24-                        |  |
| 3.0  | - 65, column 14, line 11 to column 15, line 9, column 15, lines 54-67.  |  |  | 27,33,34                                  |  |
| Y  |   |  |  | 0.4.10.00.00.00.00.40                     |  |
| Y. P   | Y, P US 6,611,706 B2 (AVRAHAMI et al) 26 August 2003 (26.08.2003), See abstract, column   |  |  | 3,4,19,20,28,29,36-40<br>1,13,14          |  |
| -,-  | 14, lines 21-35.  |  |  |   |  |
|  |   |  |  |   |  |
|  |   |  |  |   |  |
|  | ·   |  |  |   |  |
|  |   |  |  |   |  |
|  |   |  |  |   |  |
|  |   |  |  |   |  |
|  |   |  |  |   |  |
|  |   |  |  |   |  |
|  |   |  | <del></del>  |   |  |
| Purther documents are listed in the continuation of Box C See patent family annex.   |   |  |  |   |  |
| Special categories of cited documents: "T" later document published aft  |   |  |  | the international filing date or priority |  |
| "A" document   | defining the general state of the art which is not considered to be   | principle or the   | contact with the applications of underlying the investment | ation but cited to understand the         |  |
| •  | arricular relevance   |  |  | claimed invention cannot be               |  |
| "E" carlier ap   | earlier application or patent published on or after the international filing date considered novel or cannot be considered to invo-<br>when the document is taken alone |  |  | red to involve an inventive step          |  |
| "L" document   | which may throw doubts on priority claim(s) or which is cited to  |  |  |   |  |
| specified)   | the publication date of another citation or other special reason (as  | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is |  |   |  |
| "O" document referring to an oral disclosure, use, exhibition or other means   |   | combined with  | one or more other such                                     | documents, such combination               |  |
| "P" document published prior to the international filing date but later than the   |   |  | o a person skilled in the                                  |   |  |
| document member of the same patent family priority date claimed  |   |  |  | family                                    |  |
| Date of the actual completion of the international search  Date of mailing of the international search report  |   |  |  |   |  |
|  |   | 04 AUC 2004  |  |   |  |
| 02 July 2004 (02.07.2004) Name and mailing address of the ISA/US   |   | Authorized officer   | U = AL   | A A A A A A A A A A A A A A A A A A A     |  |
| Mail Stop PCT, Attn: ISA/US  |   | Authorized officer A Arm 41. Thouse Fo.  |  |   |  |
| Commissioner for Patents   |   | Sharon Kenned  |  |   |  |
| P.O. Box 1450<br>Alexandria, Virginia 22313-1450   |   | Telephone No. 703/308-0858   |  |   |  |
| Facsimile No. (703) 305-3230   |   |  |  |   |  |
| Form PCT/IC  | 1/210 (canond chaot) (July 1000)  | <del></del>  |  |   |  |